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Dear Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): C. L. Bates; P. R. Day; and J. M. Santosuosso

For: **METHOD, SYSTEM, AND PROGRAM FOR ENHANCING TEXT COMPOSITION IN A TEXT EDITOR PROGRAM**

Enclosed are:

- ☒ 6 No. of Sheets of Drawings Sheet(s) of drawings ( ☒ informal) + 0 extra copies;  
☒ 22 pages of Application; 12 pages of specification, 1 page of abstract  
☒ An assignment of the invention to International Business Machines Corporation. ( ☐ Will follow.)  
☐ An associate power of attorney.  
☐ A verified statement to establish small entity status under 37 CFR 1.9 and 1.27.  
☐ Declaration and Power of Attorney. ( ☐ Will follow.)  
☐ Certified copy of Patent Application No. filed from which priority is claimed under 35 U.S.C. §119.  
☐ IDS enclosed.        with references.

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	ITEM	NO. OF CLAIMS FILED MINUS BASE*	NO. OF CLAIMS OVER BASE	X SM/LG ENTITY FEE	\$ AMOUNT
A	TOTAL CLAIMS FEE	36 - 20* =	16	X \$9 or \$18	\$288
B	INDEPENDENT CLAIMS FEE**	3 - 3* =	0	X \$39 or \$78	\$0
C	SUBTOTAL - ADDITIONAL CLAIMS FEE (ADD FINAL COLUMN IN LINES A + B)				288
D	MULTIPLE-DEPENDENT CLAIMS FEE SMALL ENTITY FEE = \$130; LARGE ENTITY FEE = \$260				\$0
E	BASIC FEE* SMALL ENTITY FEE = \$345; LARGE ENTITY FEE = \$690				\$690
F	TOTAL FILING FEE (ADD TOTALS FOR LINES C, D, AND E)				\$978
G	ASSIGNMENT RECORDING FEE				\$ 40
	**LIST INDEPENDENT CLAIMS 1, 13, 25				

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**24033**

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METHOD, SYSTEM, AND PROGRAM FOR ENHANCING  
TEXT COMPOSITION IN A TEXT EDITOR PROGRAM

BACKGROUND OF THE INVENTION

5 1. Field of the Invention

Preferred embodiments provide a method, system, and program for editing text and, in particular, improving the composition and form of text.

10 2. Description of the Related Art

One challenge writers face when composing a document or text is to avoid repetitive use of key words and phrases. Writers can improve the flow of their composition by editing a document to replace frequently repeated words or phrases with different words or phrases that convey the same thought. In fact, H.W. Fowler's famous work on English composition "The Kings English", 2<sup>nd</sup> ed. (1908) cautions that

15 Vivid writers must be careful not to repeat any conspicuous phrase so soon that a reader of ordinary memory has not had time to forget it before it invites his attention again. Whatever its merits, to use it twice (unless deliberately and with point) is much worse than never to have thought of it.

The Kings English, Ch. II, Part 60.

20 Below is an example of a passage that repeats a key term:

In many ways our shoes can talk. But not with their tongues. By their size they **show** how big we are. By their make and style they **show** who we are; that is, they **show** our status, our occupation, what we see in ourselves, and how we want others to see us.

25 The writer would recognize that in the above passage the word "show" is repeated. To improve the flow and composition of the passage, the writer would edit the passage by replacing repeated instances of "show" with different words that convey the same meaning. For instance, the edited passage that replaces repeated instances of "show" could read:

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To overcome the limitations in the prior art described above, preferred embodiments disclose a computer implemented method, system, and program for editing text in a computer text editor program. A determination is made of terms repeated in a section of text. A determination is then made of terms associated with the repeated terms that may be used as substitute terms for the repeated terms. A selection is made of one instance of one repeated term in the text and user selection is received of one associated term for the selected instance of the repeated term. The selected associated term is replaced for the selected instance of the repeated term in response to the user selection.

The section of text in which repeated terms are determined is capable of comprising a paragraph, a sentence, a page, a sub-heading or the entire document.

5 In further embodiments, a graphical user interface (GUI) is displayed with the repeated terms. The selected instance of the repeated term in the text is graphically indicated and the determined terms associated with the selected repeated term are displayed. The user selected associated term is substituted into the text for the graphically indicated selected repeated term. Graphical indication is then made of a next

10 repeated term in the text.

In still further embodiments, different groups of associated terms are maintained, wherein each group comprises different sets of associated terms. A determination is made of a selected group of associated terms, such as a literary category of associated terms. In such case determining the terms associated with the selected repeated term further comprises determining terms in the selected group associated with the selected repeated term, wherein different groups are capable of providing different associated terms for the selected repeated term.

Preferred embodiments provide a tool for use with a word processing program that locates repeated terms and provides the user with a list of possible substitute terms to use for the repeated term. With the preferred embodiments, the user can view the repeated terms and determine how to substitute terms for the repeated terms to avoid using the same term frequently, which is undesirable from a composition standpoint. Moreover, with preferred embodiments, the user may select a particular literary category, e.g., the Bible, Shakespeare, Mark Twain, etc., of associated terms to use when determining a term to substitute for a repeated term. In this way, the user can locate substitute terms that are related according to a specific literary category.

### BRIEF DESCRIPTION OF THE DRAWINGS

Referring now to the drawings in which like reference numbers represents corresponding parts throughout:

FIG. 1 illustrates a computing environment in which preferred embodiments are implemented;

FIGs. 2-5 illustrate graphical user interface (GUI) panels in which preferred embodiments of the present invention are implemented; and

FIG. 6 illustrates program logic to assist users in editing text to improve the composition in accordance with preferred embodiments of the present invention.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the following description, reference is made to the accompanying drawings which form a part hereof, and which illustrate several embodiments of the present invention. It is understood that other embodiments may be utilized and structural and operational changes may be made without departing from the scope of the present invention.

FIG. 1 illustrates a computing environment in which preferred embodiments are implemented. The computing environment includes a computer system 2 having a processor 4 and a memory 6. The processor 4 may comprise any computer microprocessor device known in the art. The memory 6 may comprise any computer volatile memory device known in the art for storing data structures that the processor 4 is accessing and processing. Alternatively, the memory 6 may comprise any type of non-volatile storage device known in the art capable of being accessed by the processor 4, such as a hard disk drive, tape drive, etc.

The memory 6 includes a text editor program 12, a composition program 14, and document 16. The text editor program 12 executes in memory 6 to provide a graphical user interface (GUI) text editing tool known in the art, such as WordPerfect, Microsoft Word, Lotus Word Pro, etc.\*\* The composition program 14 may be a component within

the installed text editor program 12 or a separate utility that is integrated with the text editor program 12 user interface. The system further includes a display monitor 18 for displaying the graphical user interface (GUI) of the text editor program 12 and at least one input device 20, such as a touch pad, touch screen, mouse, pen stylus, keyboard,  
5 and/or any other input device known in the art capable of selecting displayed graphical elements and entering user input.

The composition program 14 searches specified portions of the document 16 for instances of repeated terms. The definition of a repeated term depends upon the unit of the document 16 the composition program 14 searches. For instance, if the unit  
10 searched is a paragraph, then the definition of a repeated term may be any term used more than once in the paragraph. Alternatively, if the unit searched is a sentence or subsection within the document, then the definition of repeated term may be any word or word stem repeated twice in a sentence. If the repeated term is a word "stem", then the composition program 14 would use a stemming algorithm known in the art to locate all  
15 words including the same word "stem", e.g., "gratify", "gratification", "grateful," "ungrateful", "ingrate", etc. Still further, the composition program 14 may define a repeated term as repeated a determined number of times, where the determined number of times is a function of the total number of words in the section or whole of the document being considered. Thus, if the section considered is relatively short, then a repeated term  
20 would need to be repeated fewer times than a repeated term in a relatively longer section.

FIG. 2 illustrates an example of a dialog box 50a the composition program 14 would generate on the display monitor 18 after processing a passage from the text in the document 16, shown in box 52a. Text box 52a displays the located repeated terms in the passage in bold. The replace box 54a displays the term highlighted in the text box 52a,  
25 e.g., "satisfaction" in FIG. 2, that the user may change with substitute terms displayed in a "with" window 56a. If the user finds an acceptable substitute term, then the user would highlight that term and select the "select" button 58, and that term would be substituted for the highlighted term in box 52a. Alternatively, if the user does not want to change

the highlighted repeated term, then the user would select the "skip" button 62 to consider the next repeated term.

FIG. 3 shows the dialog box 50b after the user selected the term "gratification" in the "with" box 56a in FIG. 2. In FIG. 3, the term "gratification" is shown in text box 52b, which is substituted for the previously highlighted term "satisfaction" in box 52a. In FIG. 3, the "replace" box 54b shows the next repeated term "handicaps", highlighted in box 52b, and substitution terms for "handicaps" in the "with" box 56b.

If the user selects the "add word" graphical button 60 in FIGs. 2 and 3, then the "associate term" dialog box 80 would be displayed as shown in FIG. 4. The user may enter a word in the "enter term" edit box 82 to associate with the term in the "associate with" box 82. In the example shown in FIG. 4, the "associate with" box 84 is pre-filled in with the term "handicaps" that was displayed in the "replace" box 54b when the user selected the "add word" button in the dialog box 50b in FIG. 3. Alternatively, the user may enter a different term in the "associate with" box 84. The "current associations" box 86 lists terms currently associated with the term in the "associated with" box 84. Selection of the "OK" button 88 associates the term or phrase in the "enter term" box 82 with the term displayed in the "associate with" box 84. This association may be done using currently known methods in the art for maintaining associations of words in a dictionary, thesaurus or other editing tool. Further, a term highlighted in the "current associations" box 86 may be removed from the group of words associated with the term in the "association with" box 84 by selecting the "delete" pushbutton 90.

In this way, whenever the term in the "associate with" 84 box is subsequently highlighted in the text box 52a, b (FIGs. 2, 3) as a repeated term, then the term added as an associated word through the "associate term" dialog box 80 will be displayed in the "with" box 56a, b in the composition helper dialog box 50a, b to provide a new substitution possibility for a repeated term. This allows the user to associate new terms or phrases with subject terms or phrases that will be considered when selecting terms or phrases to substitute for repeated terms or phrases.

FIG. 5 illustrates an alternative embodiment including association groups. An association group provides a group of terms and associated words. An association group may comprise a literary category, such as Shakespeare, Biblical, Old English, American Slang, Mark Twain, user selected, etc. Each association group provides a separate association of substitute terms for terms based upon how the particular group or literary category associates words. For instance, in the Shakespeare group, the substitute terms would comprise terms that Shakespeare uses together, in parallel or to connote the same meaning. There may be an additional group for other literary figures, such as a Mark Twain. Further, a Biblical group could associate terms used together, in parallel or that are used for the same meaning as found in the Bible. The "user selected" group may comprise words associations created by a particular user. The user may start with a base association, such as the Webster's Thesaurus, and then over time create new associations and remove associations that are not particularly suited for substitution. In this way, a user may select substitute terms that would be used in that particular selected association group, e.g., Shakespeare, the Bible, user selected, etc.

FIG. 5 illustrates a "literary group" drop down menu 90 that displays a list 92 of selectable available association groups. The words displayed in the "with" box 56a, b are based on the words associated according to the association group selected from the drop down list 92. In this way, the composition program 14 would maintain different associations of related words to substitute for each other for different association types in association files. The association groups may be assembled using a text parsing program capable of determining words the association group treats as related, e.g., treated as related in the Bible, Mark Twain, etc. Alternatively, the association of words may be created by experts knowledgeable in the field of the particular association group. Thus, predefined association groups would be provided for use with the composition program 14.

FIG. 6 illustrates logic implemented in the composition program 14. The composition program 14 is invoked at block 100 when the computer 2 user invokes the



composition program 14 for a selected region of text in the document 16. The selected region may comprise all the text in the document 16 or some portion thereof. The user may invoke the composition program 14 through the GUI menu of the text editor 12 or through a key on the input device 20. For instance, the composition program 14 may be  
5 invoked from the same menu item list where the user would invoke the spell checker, grammar checker and thesaurus. In response to being invoked, the composition program 14 parses (at block 102) the selected text and determines terms repeated within a predetermined section of text. The predetermined section by default may comprise a paragraph. However, the user may configure the composition program 14 to check for  
10 terms repeated within other subregions of the document, such as within sentences, pages, document sections, etc. In preferred embodiments, the composition program 14 would not check for commonly used terms such as "and", "to", "in", "the", etc.

Moreover, when determining repeated terms, the composition program 14 may locate variants of a term having the same "stem" using stemming algorithms known in the  
15 art. For instance, the composition program 14 could identify "gratify", "gratification", "grateful", "gratefulness" and "gratifying" as repeated terms having the same stem. Moreover, the composition program 14 could locate as terms words that include the stem, such as "ungrateful", "ingrate", etc.

After determining repeated terms, the composition program 14 begins a loop from  
20 blocks 106 to 124 for each repeated term *i*. At block 108, the composition program 14 highlights term *i* in the text box 52a, b; scrolls downward through the text in the document 16 displayed in the text box 52a, b if term *i* is not currently displayed in the text box 52a, b; displays all repeated terms displayed in the text box 52a, b as bold; and displays term *i* in the "replace" window 54a, b. The composition program 14 then  
25 determines (at block 110) all words associated with term *i* and displays (at block 112) all determined associated words in the "with" box 56a, b. As discussed, associated words may be stored in a manner known in the art, such as the data structure and algorithm techniques used for storing related words in a thesaurus program.

After block 112, the composition program 14 waits for the user to take a particular action. At block 120, the composition program 14 receives user selection of a term displayed in the "with" box 56a, b, i.e., the user highlighted a term in the "with" box and then selected the "select" button 58. In response, the composition program 14 (at block 5 122) would delete the highlighted repeated term  $i$  in the text displayed in text box 52a, b and replace the removed term with the selected term. The composition program 14 would then proceed (at block 124) back to block 106 to allow the user to change the next repeated term ( $i+1$ )th term in the text. As discussed, the user may select the "skip" button 62 to proceed to block 124 to consider the next repeated term without replacing the 10 currently highlighted term.

At block 140, the composition program 14 receives user selection of the "add word" button 60 in the composition helper window 50a, b. In response, the composition program 14 displays (at block 142) the associate term dialog box 80 (FIG. 4) with the term  $i$ , which was displayed in the "replace" box 54a, b when the "add word" button 60 15 was selected, displayed in the "associate with" box 84.

At block 150, the composition program 14 receives a user selection of a button in the "associate term" dialog box 80. If the user selected (at block 152) the "delete word" button 90 while a term is selected in the "current associations" box 86, e.g., previously highlighted by the user input device, then the composition program 14 would delete (at 20 block 154) the selected term in the "current associations box" 86 from the group of words associated with the term in the "association with" box 84. Otherwise, if the user selected the "OK" button 88, then the composition program 14 would save (at block 158) the term in the "enter term" box 82 as a word associated with the term in the "associate with" box 84. If the user (at block 156) did not select the "OK" button, then the only other button is 25 the "close button" 92, which would cause the composition program 14 to close the "associate term" box 80.

If the user selects the "close" button in either the "composition helper" dialog box 50a, b or the "associate term" box 80, then the composition program 14 would close such

window. In preferred embodiments, after closing the "composition helper" box 50a, b, control is returned to the main GUI window of the text editor 12.

Preferred embodiments provide a composition tool to use with text editor and word processing programs known in the art to help the user avoid repeating certain key terms. The composition tool of the preferred embodiments automatically identifies repeated terms and then provides the user with a list of suitable substitute terms to use for one or more of the repeated terms.

#### Alternative Embodiments and Conclusions

10 This concludes the description of the preferred embodiments of the invention. The following describes some alternative embodiments for accomplishing the present invention.

The preferred embodiments may be implemented as a method, apparatus or program using standard programming and/or engineering techniques to produce software, firmware, hardware, or any combination thereof. The program, code and instructions in which the preferred embodiments are implemented are accessible from and embedded in an information bearing medium, which may comprise one or more computer-readable devices, firmware, programmable logic, memory devices (e.g., EEPROMs, ROMs, PROMs, RAMs, SRAMs, etc.), hardware, electronic devices, a computer readable magnetic storage unit, CD-ROM, a file server providing access to the programs via a network transmission line, wireless transmission media, signals propagating through space, radio waves, infrared signals, etc. Of course, those skilled in the art will recognize that many modifications may be made to this configuration without departing from the scope of the present invention.

25 The preferred algorithm described particular steps as occurring in a particular order. However, in further embodiments the order of the steps may be changed and certain steps removed and added without departing from the scope of the invention.

Moreover, different steps may be performed to execute the overall operation of the algorithm.

5 The preferred embodiment GUI described repeated terms as being bolded and the term to substitute as being highlighted. In further embodiments, the repeated terms and term to substitute may be indicated in other ways, such as displaying the terms in different colors, different fonts, different font size, etc.

10 The preferred embodiment GUI was described as having particular pushbuttons to cause a particular set of actions to occur. In further embodiments, the GUI panels for the composition tool may include additional pushbuttons to provide additional functions or combinations of functions described herein.

15 In preferred embodiments, the composition program 14 provides a tool for editing repeated terms to allow the user to use the tool to substitute an associated term for the repeated term. In further embodiments, the composition program 14 may check for repeated phrases, such as "for instance," "in this way", etc., to allow the user to replace a repeated phrase with an associated phrase.

20 In summary, the present invention provides a system, method, and program for editing text in a computer text editor program. A determination is made of terms repeated in a section of text. A determination is then made of terms associated with the repeated terms that may be used as substitute terms for the repeated terms. A selection is made of one instance of one repeated term in the text and user selection is received of one associated term for the selected instance of the repeated term. The selected associated term is replaced for the selected instance of the repeated term in response to the user selection.

25 The foregoing description of the preferred embodiments of the invention has been presented for the purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise form disclosed. Many modifications and variations are possible in light of the above teaching. It is intended that the scope of the invention be limited not by this detailed description, but rather by the claims

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**\*\*WordPerfect is a registered trademark of Corel Corporation; Word Pro is a registered trademark of Lotus Development Corporation.**

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1           1.       A computer implemented method for editing text in a computer text editor  
2   program, comprising:  
3       determining terms repeated in a section of text;  
4       determining terms associated with the repeated terms that may be used as  
5   substitute terms for the repeated terms;  
6       selecting one instance of one repeated term in the text;  
7       receiving user selection of one associated term for the selected instance of the  
8   repeated term; and  
9       replacing the selected associated term for the selected instance of the repeated  
10   term in response to the user selection.

1            2.        The computer implemented method of claim 1, further comprising:  
2            selecting a next instance of one repeated term in the text not previously selected  
3            after replacing the previously selected associated term for the selected instance of the  
4            repeated term.

1           3.       The computer implemented method of claim 1, wherein the section of text  
2   in which repeated terms are determined is capable of comprising: a paragraph; a sentence;  
3   a page; a sub-heading; or the entire document.

1           4.       The computer implemented method of claim 1, further comprising:  
2           displaying a graphical user interface (GUI) with the repeated terms;  
3           graphically indicating the selected instance of the repeated term in the text;  
4           displaying the determined terms associated with the selected repeated term,  
5       wherein the user selected associated term is substituted into the text for the graphically  
6       indicated selected repeated term; and

1            5.        The computer implemented method of claim 4, further comprising:  
2            displaying the repeated terms with the text in the GUI differently than non-  
3            repeated terms in the text.

1            7.        The computer implemented method of claim 6, further comprising:  
2            receiving user input of a term to remove as an associated term with the subject  
3            term, wherein the removed term is not one of the determined associated terms when the  
4            subject term is a subsequently determined repeated term.

1            8.        The computer implemented method of claim 1, further comprising:  
2            maintaining different groups of associated terms, wherein each group comprises  
3            different sets of associated terms; and  
4            determining a selected group of associated terms, wherein determining the terms  
5            associated with the selected repeated term further comprises determining terms in the  
6            selected group associated with the selected repeated term, wherein different groups are  
7            capable of providing different associated terms for the selected repeated term.

1           13.       A system for editing text in a computer text editor program, comprising:  
2           a computer;  
3           a memory device accessible to the computer;  
4           an application program loaded into the memory device, wherein the computer  
5 executes the application program from the memory to perform:  
6                   (i) determining terms repeated in a section of text;  
7                   (ii) determining terms associated with the repeated terms that may be used  
8 as substitute terms for the repeated terms;  
9                   (iii) selecting one instance of one repeated term in the text;



10 (iv) receiving user selection of one associated term for the selected  
11 instance of the repeated term; and  
12 (v) replacing the selected associated term for the selected instance of the  
13 repeated term in response to the user selection.

1 14. The system of claim 13, wherein the computer executes the application  
2 program to further perform:  
3 selecting a next instance of one repeated term in the text not previously selected  
4 after replacing the previously selected associated term for the selected instance of the  
5 repeated term.

1 15. The system of claim 13, wherein the section of text in which repeated  
2 terms are determined is capable of comprising: a paragraph; a sentence; a page; a sub-  
3 heading; or the entire document.

1 16. The system of claim 13, further comprising a display monitor coupled to  
2 the computer, wherein the computer executes the application program to further perform:  
3 displaying on the display monitor a graphical user interface (GUI) with the  
4 repeated terms;  
5 graphically indicating in the GUI the selected instance of the repeated term in the  
6 text;  
7 displaying the determined terms associated with the selected repeated term,  
8 wherein the user selected associated term is substituted into the text for the graphically  
9 indicated selected repeated term; and  
10 graphically indicating in the GUI a next instance of one repeated term in the text  
11 as the next selected instance of one repeated term.

1            20.     The system of claim 13, wherein the computer executes the application  
2     program to further perform:  
3            maintaining different groups of associated terms, wherein each group comprises  
4     different sets of associated terms; and  
5            determining a selected group of associated terms, wherein determining the terms  
6     associated with the selected repeated term further comprises determining terms in the  
7     selected group associated with the selected repeated term, wherein different groups are  
8     capable of providing different associated terms for the selected repeated term.

4 determining terms repeated in a section of text;  
5 determining terms associated with the repeated terms that may be used as  
6 substitute terms for the repeated terms;  
7 selecting one instance of one repeated term in the text;  
8 receiving user selection of one associated term for the selected instance of the  
9 repeated term; and

a) 1970-1979		b) 1980-1989		c) 1990-1999		d) 2000-2009		e) 2010-2019	
Year	Age	Year	Age	Year	Age	Year	Age	Year	Age
1970	10	1980	10	1990	10	2000	10	2010	10
1971	11	1981	11	1991	11	2001	11	2011	11
1972	12	1982	12	1992	12	2002	12	2012	12
1973	13	1983	13	1993	13	2003	13	2013	13
1974	14	1984	14	1994	14	2004	14	2014	14
1975	15	1985	15	1995	15	2005	15	2015	15
1976	16	1986	16	1996	16	2006	16	2016	16
1977	17	1987	17	1997	17	2007	17	2017	17
1978	18	1988	18	1998	18	2008	18	2018	18
1979	19	1989	19	1999	19	2009	19	2019	19
1980	20	1990	20	2000	20	2010	20	2020	20
1981	21	1991	21	2001	21	2011	21	2021	21
1982	22	1992	22	2002	22	2012	22	2022	22
1983	23	1993	23	2003	23	2013	23	2023	23
1984	24	1994	24	2004	24	2014	24	2024	24
1985	25	1995	25	2005	25	2015	25	2025	25
1986	26	1996	26	2006	26	2016	26	2026	26
1987	27	1997	27	2007	27	2017	27	2027	27
1988	28	1998	28	2008	28	2018	28	2028	28
1989	29	1999	29	2009	29	2019	29	2029	29
1990	30	2000	30	2010	30	2020	30	2030	30
1991	31	2001	31	2011	31	2021	31	2031	31
1992	32	2002	32	2012	32	2022	32	2032	32
1993	33	2003	33	2013	33	2023	33	2033	33
1994	34	2004	34	2014	34	2024	34	2034	34
1995	35	2005	35	2015	35	2025	35	2035	35
1996	36	2006	36	2016	36	2026	36	2036	36
1997	37	2007	37	2017	37	2027	37	2037	37
1998	38	2008	38	2018	38	2028	38	2038	38
1999	39	2009	39	2019	39	2029	39	2039	39
2000	40	2010	40	2020	40	2030	40	2040	40
2001	41	2011	41	2021	41	2031	41	2041	41
2002	42	2012	42	2022	42	2032	42	2042	42
2003	43	2013	43	2023	43	2033	43	2043	43
2004	44	2014	44	2024	44	2034	44	2044	44
2005	45	2015	45	2025	45	2035	45	2045	45
2006	46	2016	46	2026	46	2036	46	2046	46
2007	47	2017	47	2027	47	2037	47	2047	47
2008	48	2018	48	2028	48	2038	48	2048	48
2009	49	2019	49	2029	49	2039	49	2049	49
2010									

10 replacing the selected associated term for the selected instance of the repeated  
11 term in response to the user selection.

1           26.     The program of claim 25, wherein the program code is further capable of  
2     causing the computer to perform:  
3           selecting a next instance of one repeated term in the text not previously selected  
4     after replacing the previously selected associated term for the selected instance of the  
5     repeated term.

1            27.     The program of claim 25, wherein the section of text in which repeated  
2 terms are determined is capable of comprising: a paragraph; a sentence; a page; a sub-  
3 heading; or the entire document.

1            28.     The program of claim 25, wherein the program code is further capable of  
2 causing the computer to perform:  
3            displaying a graphical user interface (GUI) with the repeated terms;  
4            graphically indicating the selected instance of the repeated term in the text;  
5            displaying the determined terms associated with the selected repeated term,  
6 wherein the user selected associated term is substituted into the text for the graphically  
7 indicated selected repeated term; and  
8            graphically indicating a next instance of one repeated term in the text as the next  
9 selected instance of one repeated term.

1           29.     The program of claim 28, wherein the program code is further capable of  
2     causing the computer to perform:  
3           displaying the repeated terms with the text in the GUI differently than non-  
4     repeated terms in the text.

1           31.     The program of claim 30, wherein the program code is further capable of  
2 causing the computer to perform:  
3           receiving user input of a term to remove as an associated term with the subject  
4 term, wherein the removed term is not one of the determined associated terms when the  
5 subject term is a subsequently determined repeated term.

1           32.     The program of claim 25, wherein the program code is further capable of  
2 causing the computer to perform:  
3           maintaining different groups of associated terms, wherein each group comprises  
4 different sets of associated terms; and  
5           determining a selected group of associated terms, wherein determining the terms  
6 associated with the selected repeated term further comprises determining terms in the  
7 selected group associated with the selected repeated term, wherein different groups are  
8 capable of providing different associated terms for the selected repeated term.

1            33.     The program of claim 32, wherein the program code is further capable of  
2     causing the computer to perform:  
3            receiving user input indicating to modify the groups of associated terms, wherein  
4     the user input is capable of indicating to add additional associated terms to the groups,  
5     remove associated terms from the groups, remove an entire group and add a new group of  
6     associated terms; and

1           36.     The program of claim 25, wherein the repeated terms are capable of  
2 including terms that are different words that include a same word stem.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2
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METHOD, SYSTEM, AND PROGRAM FOR ENHANCING  
TEXT COMPOSITION IN A TEXT EDITOR PROGRAM

ABSTRACT

Disclosed is a system, method, and program for editing text in a computer text  
5 editor program. A determination is made of terms repeated in a section of text. A  
determination is then made of terms associated with the repeated terms that may be used  
as substitute terms for the repeated terms. A selection is made of one instance of one  
repeated term in the text and user selection is received of one associated term for the  
selected instance of the repeated term. The selected associated term is replaced for the  
10 selected instance of the repeated term in response to the user selection. Moreover,  
associates of repeated terms may be categorized by groups, such as groups of literary  
categories.

002030" 5393E960

FIG. 1

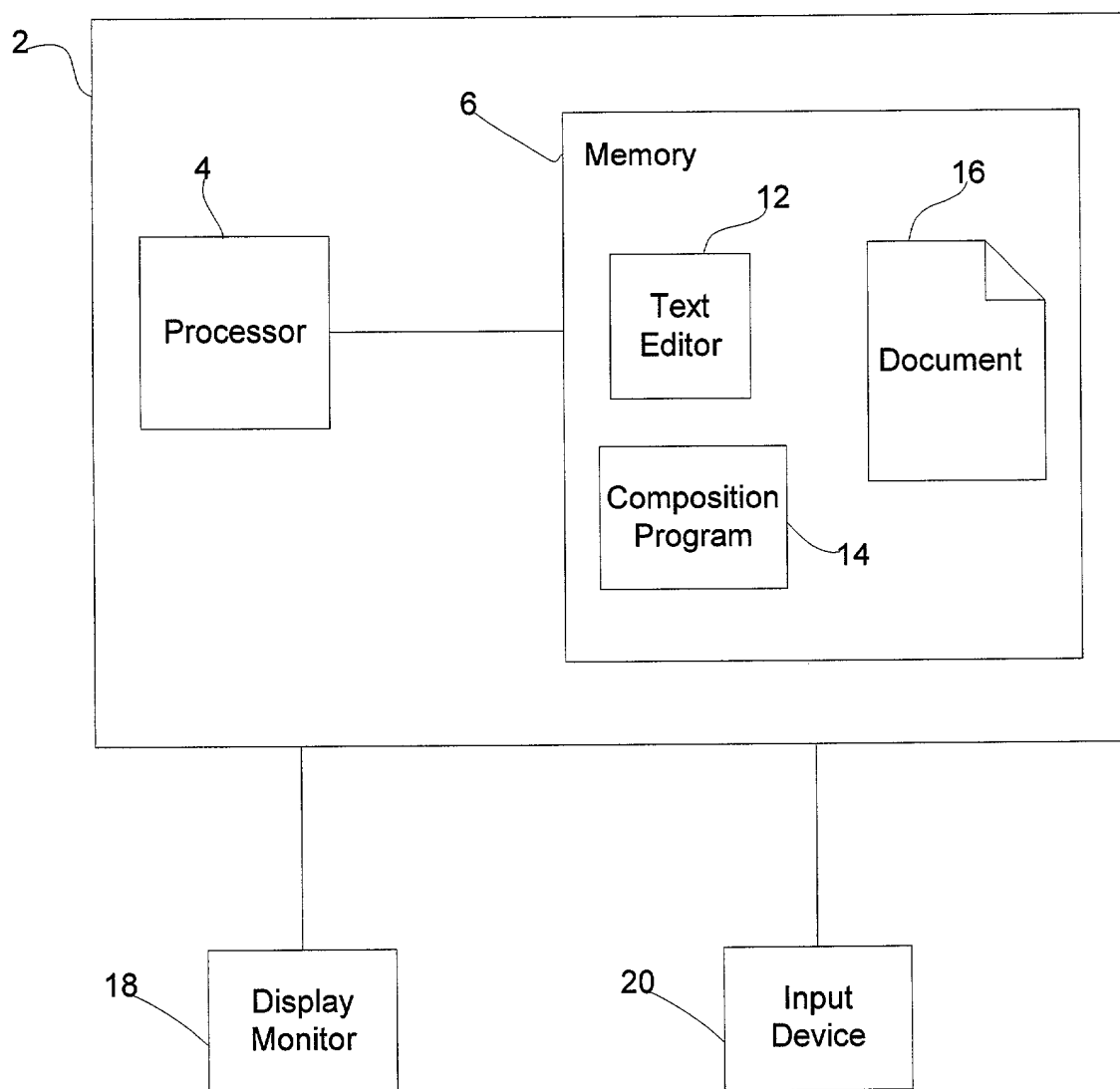




FIG. 2

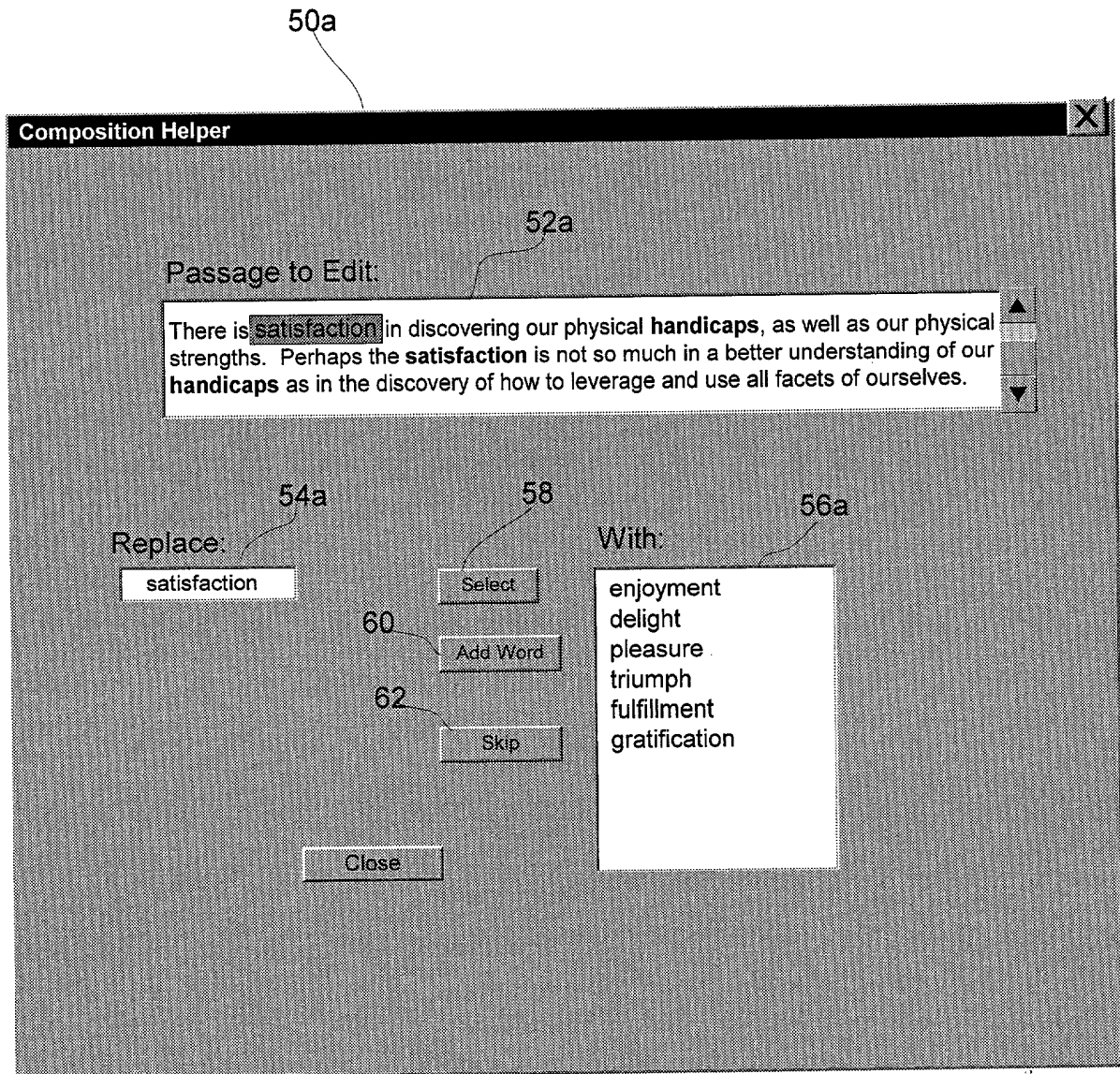


FIG. 3

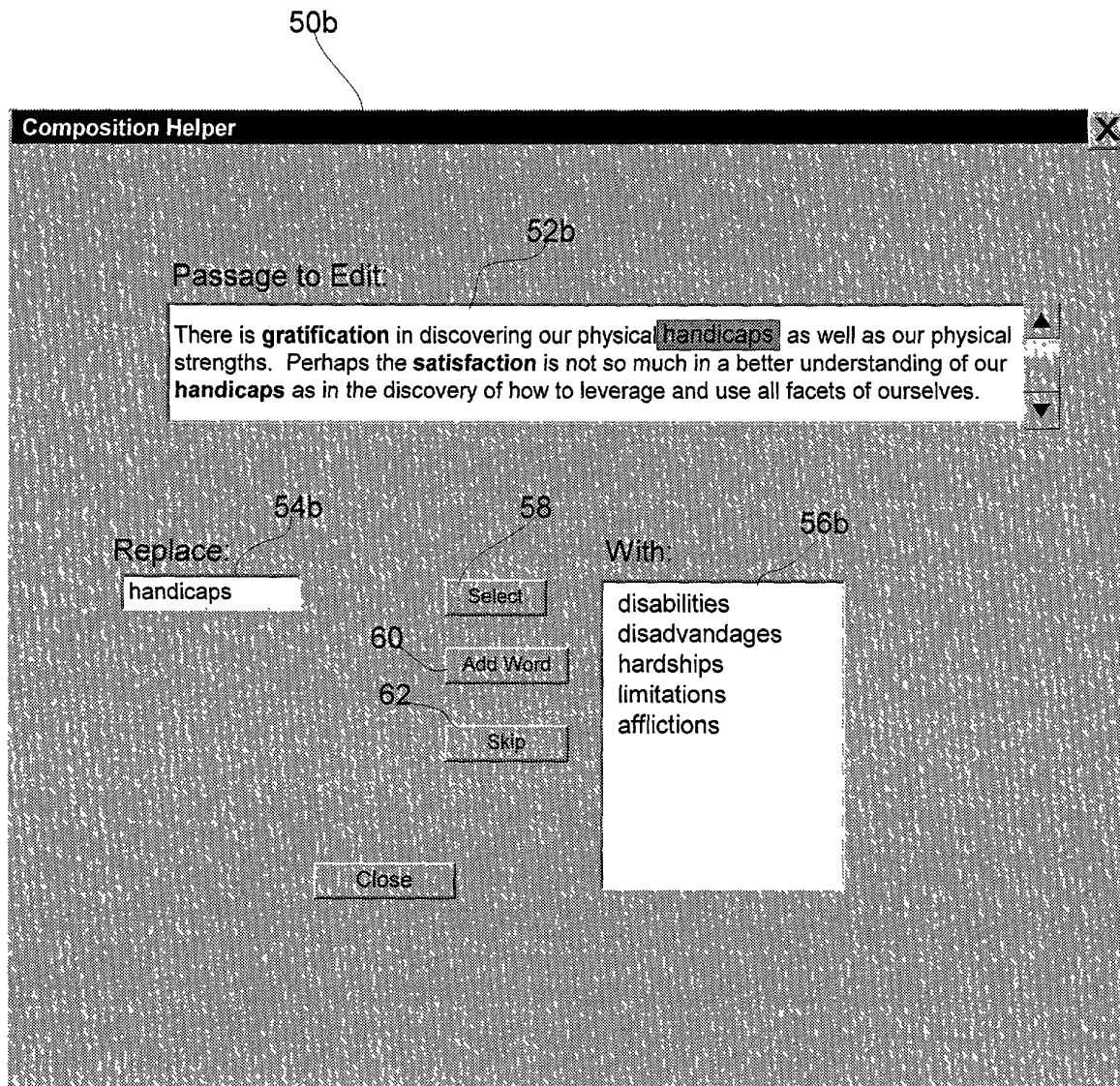


FIG. 4

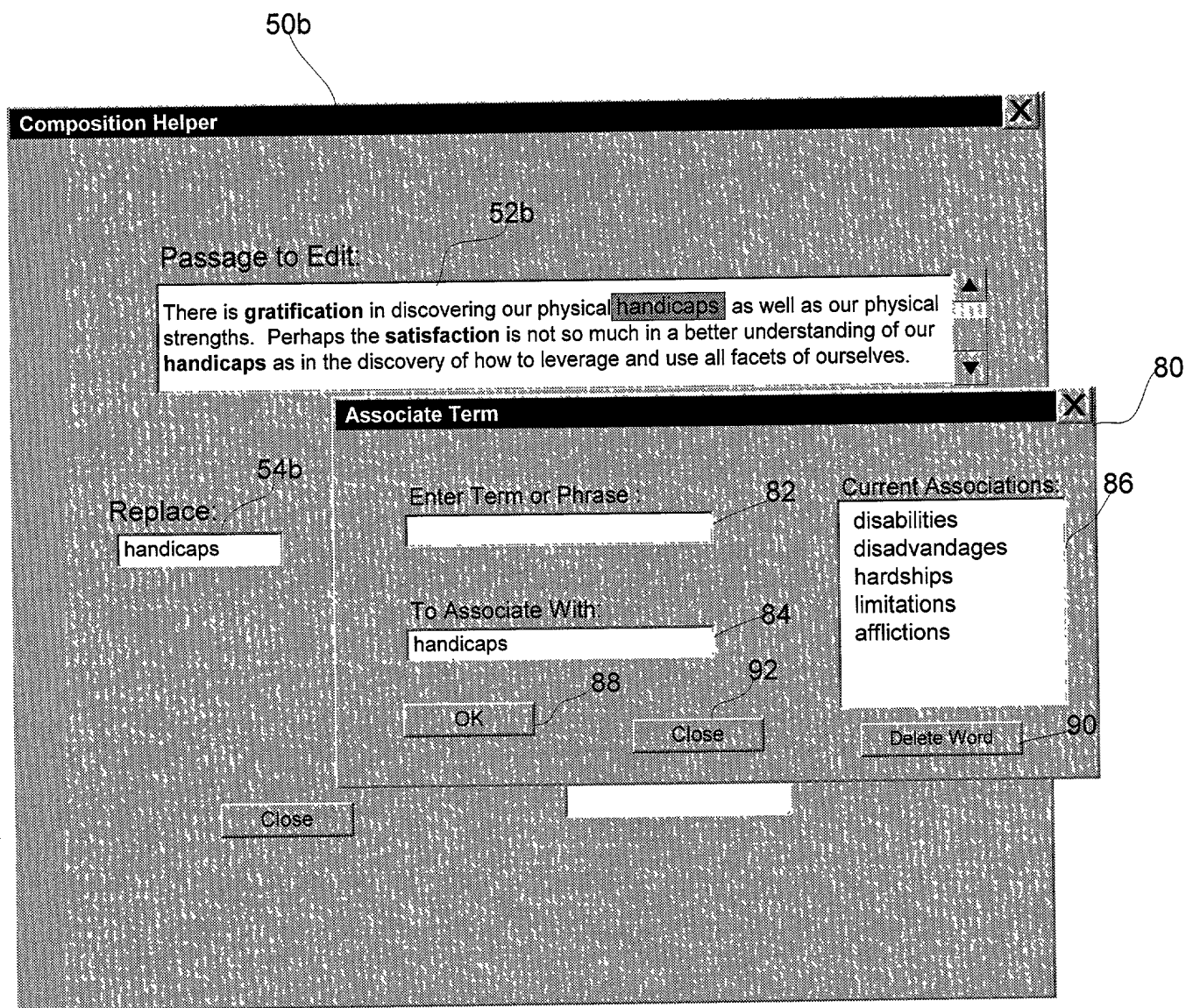


FIG. 5

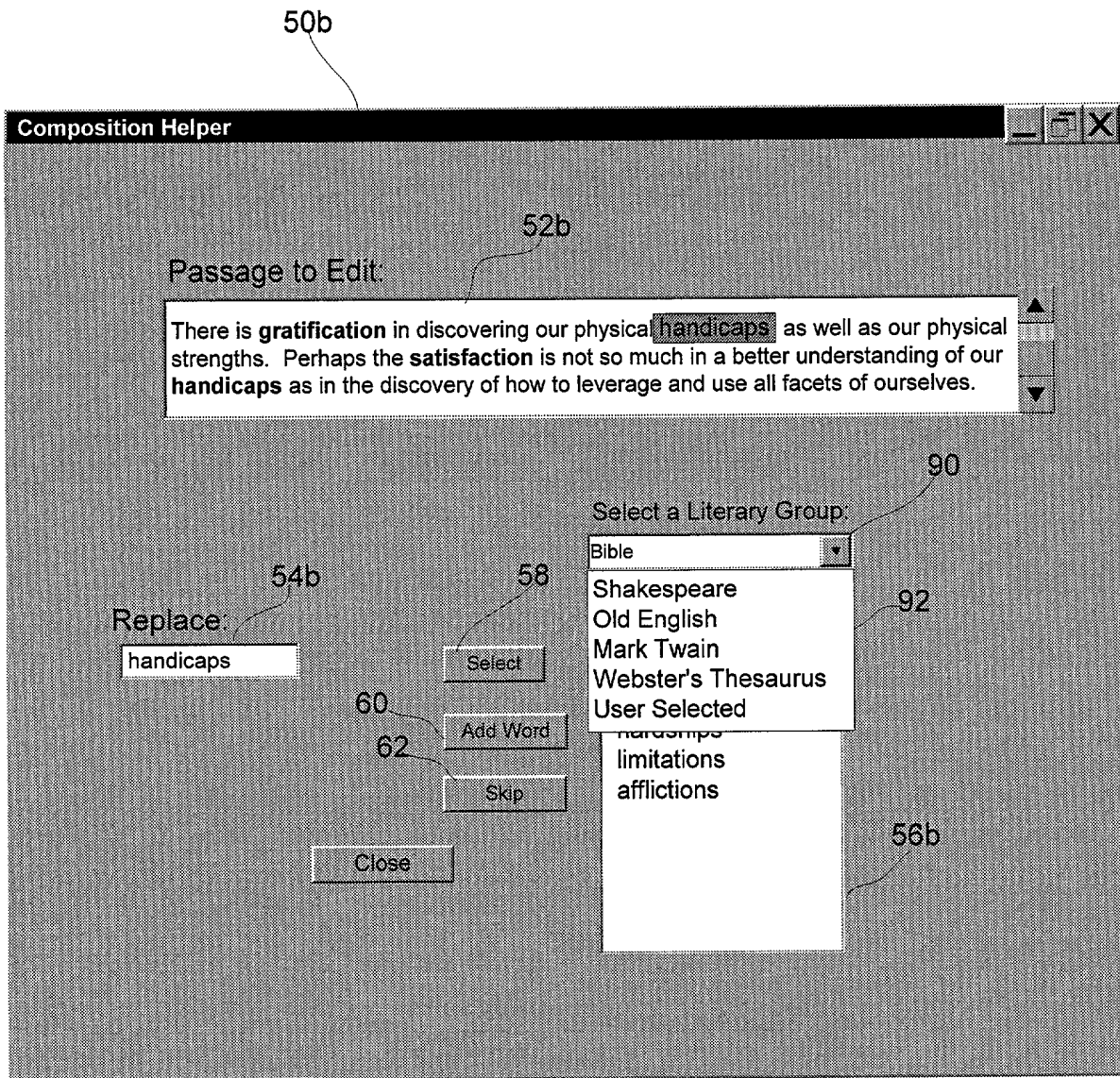
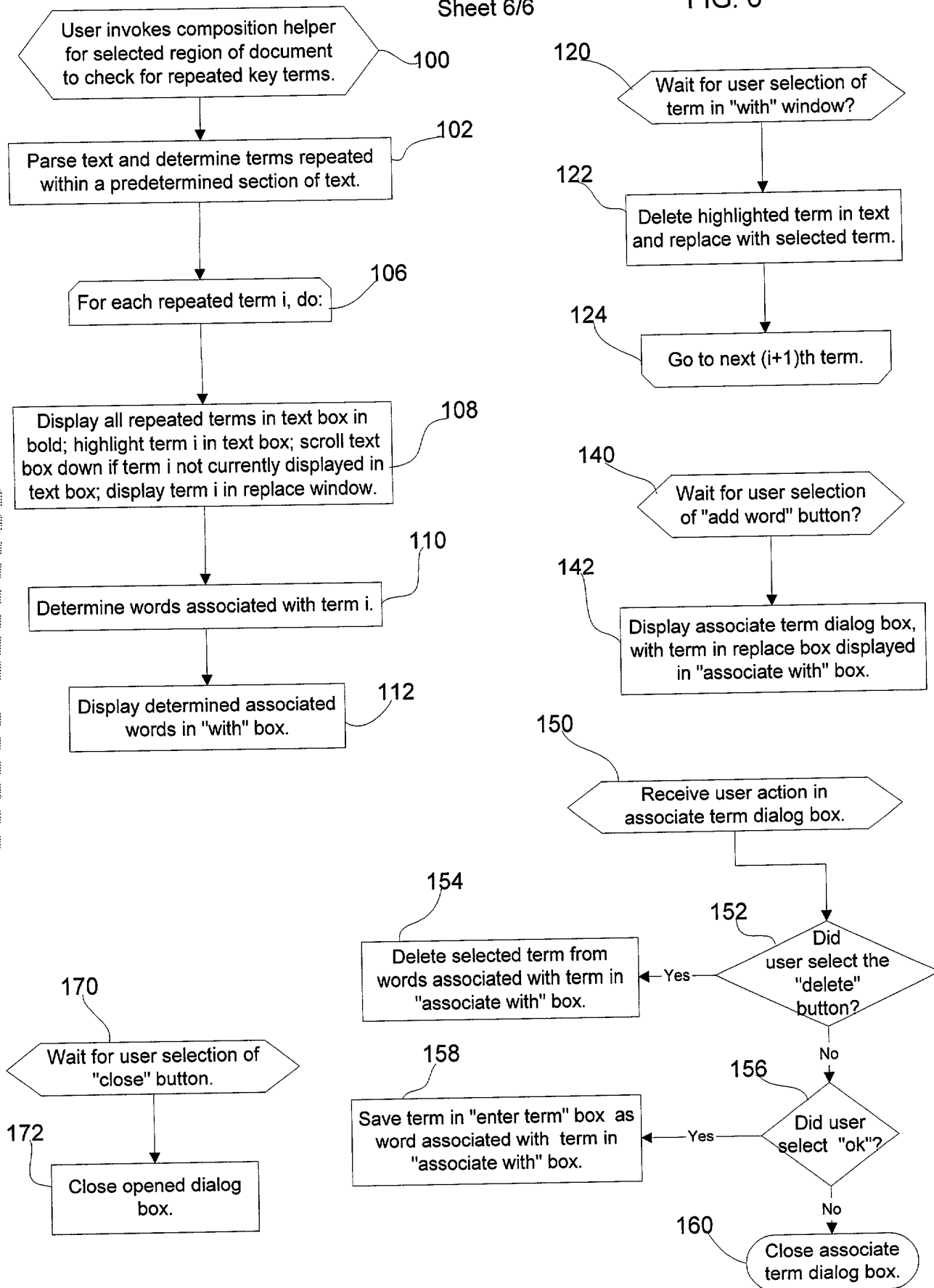


FIG. 6





# DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

DOCKET:  
ROC920000077US1

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD, SYSTEM, AND PROGRAM FOR ENHANCING TEXT COMPOSITION IN A TEXT EDITOR PROGRAM

the specification of which (check one)

☒ is attached hereto.

☐ was filed on \_\_\_\_\_

as Application Serial No. \_\_\_\_\_

and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

☐ None ☐ Yes ☐ No  
(Number) (Country) (Day/Month/Year Filed)

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56, which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

☐ None \_\_\_\_\_  
(Application Serial No.) (Filing Date) (Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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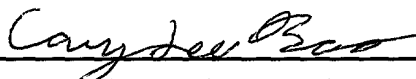
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INVENTORS SIGNATURE:



DATE:

8-1-00

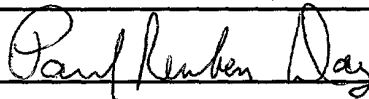
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INVENTORS SIGNATURE:



DATE:

8-1-2000

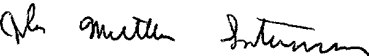
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8-1-2000

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